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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,837	01/17/2001	Jonathan Foote	FXPL-01012US0	6501

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EXAMINER

SEVER, ANDREW T

ART UNIT PAPER NUMBER

2851

DATE MAILED: 08/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/764,837

Applicant(s)

FOOTE ET AL.

Examiner

Andrew T Sever

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-12,14 and 16-18 is/are rejected.
- 7) ☒ Claim(s) 5,13 and 15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 04 August 2003 is: a) ☐ approved b) ☒ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: _____

DETAILED ACTION

1. The corrected or substitute drawings were received on 8/4/2003. These drawings are not acceptable.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the polarizing filter must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The polarizing filter is claimed in claim 5 of applicant's claims and not claim 4 as stated in applicant's arguments, however this is not significant.

Applicant has argued that the polarizing filter is a conventional feature, this is however not true. Applicant is claiming a polarizing filter on the light source, however most light sources do not have polarizing filters on them; therefore the polarizing filter is not a conventional feature. (Other than being infrared light sources, the light sources as claimed, are not limited in type and would include such well known light sources as flood lamps, heat lamps such as are used in lunch lines, and other well known examples. None of which typically have polarizing filters placed on them.)

Therefore applicant is required to show the polarizing filter or cancel the feature from the claim. A proposed drawing correction or corrected drawing is required in the next reply, **to avoid abandonment. The objection to the drawings will not be held in abeyance.**

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-4, 6-12 14, and 16-18 are rejected under 35 U.S.C. 102(a) as being anticipated by Leibe et al. (“The Perceptive Workbench” as provided by applicant’s IDS).

Leibe as provided by the applicant teaches in section three a system for determining the location of a target, which includes a plurality of infrared light sources (Leibe teaches that a ring of seven infrared illuminators is mounted on the ceiling surrounding the workbench), a projection surface with two sides oriented so that the light source illuminate one side of it, a target which can be placed entirely between the light source and one of the projection surface (such as a hand or another object), and an imaging device located on the opposite side of the projection surface for imaging the infrared shadow produced by the target in the light produced by the light sources as is also claimed in applicant’s claim 2. Leibe teaches the imaging is done by a standard b/w surveillance (video) camera with a filter that makes it impervious to visible light located

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on its lens as is claimed by applicant's claims 3 and 4. Leibe further teaches in section 5 that the shadow imaging is done by a single camera under the desk (additional imaging beyond the scope of claimed invention and irrelevant is done by an additional camera). Leibe also teaches that each of the infrared lights on the ring are sequenced on and off so that the imaging device images the shadow produced by individual ones of the light source.

With regards to applicant's claims 6, the existence of the system/apparatus taught by Leibe implies the existence of the method of using it as is claimed in applicant's claims 6-11. With regards to applicant's claim 12 if the lights are cycled (one on while the rest are off or some combination thereof) inherently at least one light source has an intensity (that of zero), which is different then that of the light emitted by another one of the plurality of light sources. With regards to applicant's claim 14, 16 and 17, Leibe teaches in section 6 in the 6th paragraph that just the IR system (overhead IR lights and IR camera underneath the translucent screen (desk)) is able to calculate the location of a person's arm/extremities, which would include determining the distance between the target (extremity) and the translucent screen. With regards to applicant's claim 18, it is inherent that moving the target would alter the shadow that appears on the translucent screen.

Allowable Subject Matter

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5. Claims 5, 13, and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 7/30/2003 have been fully considered but they are not persuasive.

With regards to applicant's arguments with regards to the rejection under 35 U.S.C. 102(a), applicant argues that the Leibe reference does not disclose that the target is located "away from the light source", applicant additionally argues that Leibe fails to teach that the imaging device is located on the side of the projection surface opposite the target, the imaging device being configured to detect a shadow from the target on the projection surface caused by individual ones of the light sources." Leibe, however does disclose these limitations in figure 1, the IR illuminator is clearly shown mounted on the ceiling away from the target, while the camera (in the side view) is shown beneath the workbench, on the opposite side of the surface with respect to the target. The fact that Leibe uses a mirror to redirect the light from underneath the work bench so that the camera can be placed in a horizontal orientation instead of a vertical orientation is irrelevant, since it is well known in the optical arts to use plan mirrors to redirect light and that they do not significantly affect the optical characteristics of the light being redirected and therefore there would be no optical difference or optical advantage of

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placing the camera directly underneath the workbench in a vertical imaging position or placing it as shown in figure 1. Accordingly applicant's arguments are not persuasive and the rejection is made final.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

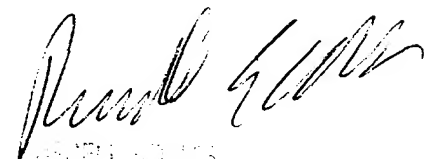
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 703-305-4036. The examiner can normally be reached on 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

AS
August 12, 2003



RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER